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Hydrographic Surveying

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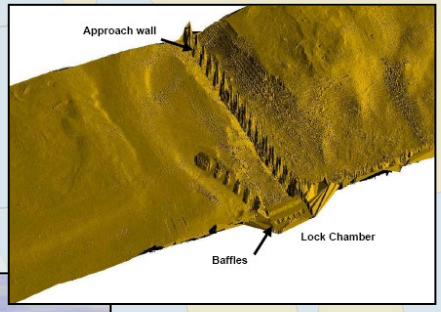
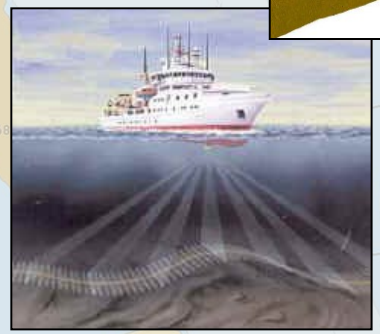
Dredging Industry Hydro Survey Issues

- **May 26, 2005: Dredging contractors meet with HQ to discuss problems with hydro survey practices in the districts;**
  - **Six contractors and DCA represented,**
  - **Concerns voiced over non-standard, ambiguous, and incorrect hydro survey practices in support of dredging among Corps offices, with both in-house surveys and contract specifications.**

- **Issues paper drafted by industry, April 2006;**
  - **Ready survey crews**
  - **EM 1110-2-1003 compliance**
  - **Timeliness**
  - **Multibeam use and application**
  - **Project acceptance**
  - **Regionalization**
  - **Use of remote tide gages**





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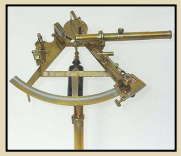


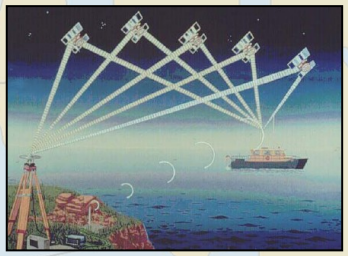
Hydro Survey Community of Practice

- **Formed Dec, 2004, with a workshop that included 23 districts;**

  Lead – Ray Williams, NAO **Co-Lead – Tim Maynard, NAE**

- **HSCP promotes information exchange among practitioners, training and professional development, recognition within PDTs, coordination of services, and sound policies and practices**

- **Business conducted mostly through email and online collaboration, with occasional dedicated or collocated meetings;**
  - **Biennial Geospatial Symposium,**
  - **Annual NAD Multi-beam Users Group,**
  - **HYPACK Annual Training Conference,**
  - **Biennial U.S. Hydrographic Conference.**



- ***Dialogue with dredging and survey contractors sought***

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Ready Survey Crews

Adequate and properly trained personnel needed for timely, accurate, valid and defensible surveys,

Needs:

- ***Proper Training*** **– PROSPECT Course, HYPACK Annual Conference, Univ of So Miss, Univ of NH, Univ of NB, equipment vendors, THSoA forums**
- **Additional levels of PROSPECT Course; i.e Hydro Survey I, II, III**
- **Sufficient number of personnel needed, depending on workload, complexity of systems, and geographic area covered**

Issue – Contract vs In-house services; *in-house capability needed!*

- **Local knowledge of waterway conditions; shoaling patterns, hydraulic behavior, etc; needed for responsive and fast surveys,**
- **In-house crews can better respond to unpredictable conditions,**
- **Third-party payment surveys; “fox guarding the henhouse?”**
- **Contract services not always cheaper!**

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EM 1110-2-1003 Compliance

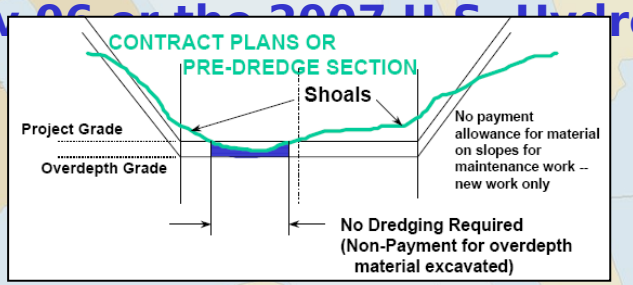
Project managers, contracts, in-house crews must comply; contracts must specify the appropriate sections and details, not just "follow the EM."

Needs:

- **Project Managers and CORs should attend PROSPECT Course,**
- **Hydro survey personnel must be included in design and pre-construction meetings, bid selections for survey services, and after-action reviews**

Issue – Dredging industry wishes to be involved in changes or updates to the EM

- **An EM update workshop with HSCP and industry is being pursued at the HSCP meeting in Nov 06 or the 2007 U.S. Hydro Conference**


CONTRACT PLANS OR
PRE-DREDGE SECTION
Shoals
Project Grade
Overdepth Grade
No payment allowance for material on slopes for maintenance work -- new work only
No Dredging Required
(Non-Payment for overdepth material excavated)

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Timeliness of Surveys

Payment and acceptance surveys must be completed promptly to avoid costly waiting periods of dredging equipment and crews.

Issues: Corps surveyors believe that, in some cases, the industry is too demanding with timelines; and in other situations, are unable to process data more quickly;

- **more voluminous and complex multi-beam data requires more processing,**
- **personnel who process data sometimes not adequately trained,**
- **vacancies and inadequate staff significantly increase survey and processing time,**
- **multiple layers of review can increase time,**
- **some delays unpredictable and unavoidable, such as weather.**

Possible resolution: Discussions between industry and HSCP on technical and procedural issues.

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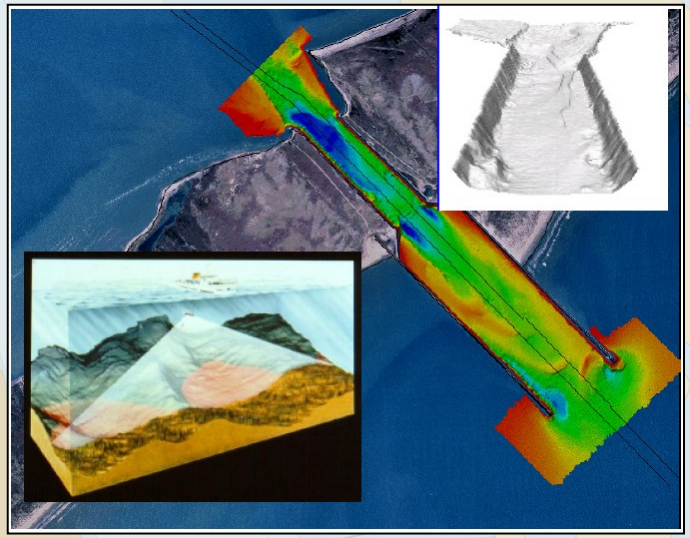
Multi-Beam Surveys

Very sophisticated and complex survey tool producing total bottom coverage; should be used for payment surveys, shoal or strike detection; should not be used on shallow-draft projects.

Needs:

- **specialized training for operators; PROSPECT Course not sufficient,**
- **consistent application according to type of waterway and survey purpose,**
- **should consider use of multi-transducer systems where multi-beam is r ll coverage**



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Regionalization

Potential:

Advantages; less cost with fewer full-service offices at each district, more consistency in contracting and field procedures.

Disadvantages; more layers of review and longer data delivery, less local expert knowledge.

"Regionalization" Successes:

- **LRD – Huntington does all surveys for LRH & LRP; river conditions are similar, although arrangement is untested in high demand conditions.**
- **NAD – districts sometimes use neighboring district crews during high demand or when neighboring crews can respond more quickly and with less cost.**
- **MVD/LRD – Multi-beam vessel and crew perform surveys for multiple districts with costs at or below contract services.**

Need: Regionalization plans must include participation of

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Project Acceptance

Survey data must be properly interpreted and used, according to accuracy obtained. Project acceptance based on one or two tenths of a foot is unreasonable.

Needs:

- **Partners and sponsors must be educated on survey accuracy,**
- **Precision must be properly represented on survey plots,**
- **Hydro surveyors should be included in design and preconstruction meetings.**

***** The only way to way to ensure a high degr**
of certainty of required channel clearance is t
target the dredge depth lower ***